Chronic pain and depressive symptoms in 6-year survival analysis of maintenance hemodialysis patients

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Background

Depression and anxiety increase mortality in chronic illness including dialysis patients (pts). Chronic pain may trigger or coexist with depression/anxiety but its impact on hemodialysis patient survival is poorly investigated.

Objectives

In a cohort of hemodialysis (HD) patients an appearance of depression/anxiety symptoms, chronic pain were assessed and its impact on 6-year patients survival analyzed.

Design and Patients

Enrolment process of study patients (in 2006) is shown in Figure 1. Patients recruited from 3 dialysis centers in Lower Silesia, Poland [Academic Hospital in Wroclaw, n=82; Hospital (public) in Milicz, n=49; International Dialysis Center (private) in Wrocław, n=97]. Patients were eligible for inclusion if the following criteria were met: (i) >6 months on dialysis, (ii) standard hemodialysis (low-flux) session 3 x a week, (iii) not hospitalized at the time of assessment, (iv) no physical impairment that would prevent the completion of the questionnaires. Exclusion criteria were (i) dementia in medical records or assessed in Mini-Mental State Examination (MMSE) which was provided for all above 65 years, (ii) alcohol/psychoactive drug addiction, (iii) antidepressive treatment.

Methods

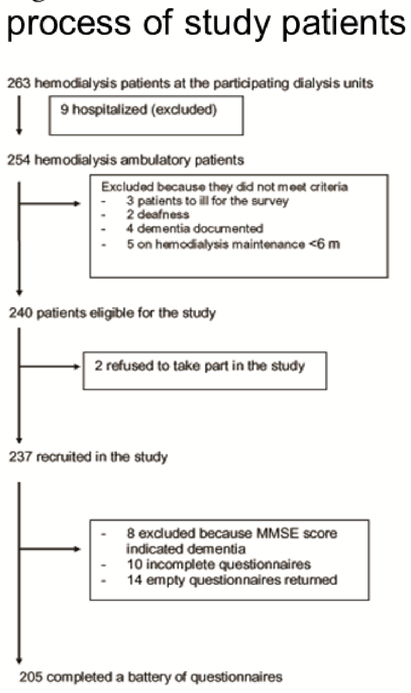
Participants completed a battery of previously validated questionnaires for Polish language as well as demographic appendix and anamnesis pain sheet. The Hospital Anxiety and Depression Scale (HADS:A and HADS:D), the 36-item Short Form Health Survey Questionnaire (SF-36) and MMSE when age was ≥65 years were provided. Two tools of pain measurement (Verbal Rating Scale – VRS and Visual Analog Scale – VAS) were used to identify patients with chronic pain.

Clinical and biochemical data (dialysis adequacy) were recorded.

Results

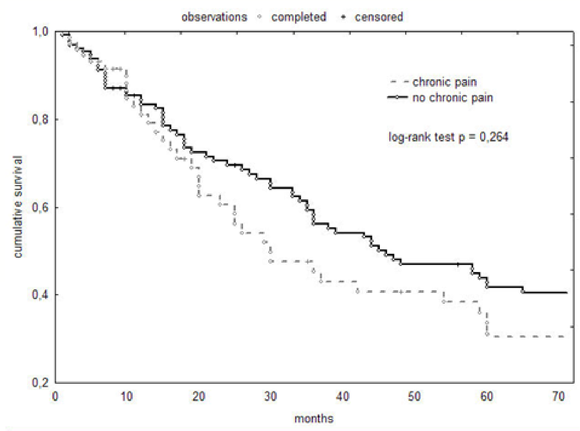
130 HD patients (63.4%) suffered from chronic pain. Patients with pain (VRS/VAS >1 for >3 months) were longer on maintenance dialysis, showed higher level of PTH, had more depressive symptoms than those without pain (all p<0.001). In 6-year period 96 (46.8%) patients died. The most common cause of death was cardiac in 44 (45.8%) patients. Highly depressed patients (>8 points in HADS:D) exhibited a higher mortality (P=0.016), independent of age, diabetes, cardiovascular disease, CRP and albumin level.

Figure 1. Enrolment process of study patients

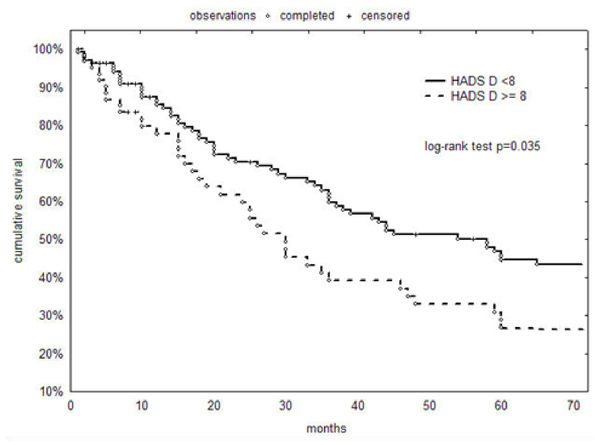


Baseline demographic and clinical characteristics (n=205)

N=205	n / mean ± SD /	%/ median; (range)
Gender female/male	85/120	41.5/58.5 %
Age	60.3 ± 13.8	60; (19-87)
Maintenance hemodialysis [months]	50.9 ± 58	26; (7-300)
Residual diuresis [>300 ml/24-h]	79	38.5%
Cause of ESRD		
glomerulonephritis	55	26.8%
diabetic nephropathy	46	22.4%
hypertensive nephropathy	45	22%
polycystickidney disease	22	10.7%
pyelonephritis	16	7.9%
other/unknown	21	10.2%
Comorbidities		
Hypertension	119	58%
Cardiovascular disease*	134	65 %
Diabetes	48	23.4%
Vascular access		
Native AVF single needle	17	8.3%
Native AVF two needles	157	76.6%
Temporal catheter	7	3.4%
Permanent catheter	22	10.7%
PTFE prosthesis	2	1%



Comparison of survival of patients with (n=130) and without chronic pain (n=75).



Comparison of survival of patients with high (n=62) and low depression score (n=141).

Cox proportional hazard regression model for 6-year survival time as dependent variable.

	Effect of	HR	95% CI	P value
Model 1	**Age**	1.015	0.943-1.052	0.041
	Serum albumin	0.581	0.305-1.274	0.018
	CRP	0.997	0.973-1.015	0.318
	HADS:D	1.055	0.944-1.121	0.016
Model 2	**Age**	0.968	0.953- 1.00	<0.001
	Serum albumin	0.664	0.368-1.201	0.028
	CRP	0.997	0.973-1.015	0.428
	HADS:D	0.994	0.923-1.072	0.341
	VRS	1.010	0.911- 1.080	0.553

Conclusion: Chronic pain, although frequent among HD patients did not lower survival. Depressive symptoms are an important predictor for all-cause mortality in HD patients, with the relationship independent of the nutritional or inflammatory status.

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